

ABSTRACT

A control device (30) receives a power supply current (I_b) from a current sensor (11) and a reactor current (I_L) from a current sensor (18) and detects a maximum value (I_{Lmax}) and a minimum value (I_{Lmin}) from the reactor current (I_L) and from the detected maximum and minimum values (I_{Lmax} and I_{Lmin}) and the power supply current (I_b) determines whether the reactor current (I_L) traverses the zero point, and if so the control device (30) generates and outputs a signal (PWMS) to an up converter (12) which responds to the signal (PWMS) by stopping switching to perform an up or down converting operation.